Research Article

A Guideline for Developing Digital Skills of Personnel in Private Higher Education Institutions toward University Reform in Bangkok Metropolis*

Ntapat Worapongpat
Eastern Institute of Technology Suvarnabhumi (EIT), Thailand
E-mail: dr.thiwat@gmail.com

Received 11 December 2025; Revised 27 January 2026; Accepted 3 February 2026

Abstract

The digital skills of personnel in private higher education institutions (PHEIs) are a critical driver of university reform, particularly in Bangkok Metropolis, which serves as a national hub for higher education and faces intense competition in academic quality and innovation. This study aimed to: (1) examine the current state, desired state, and development needs of digital skills among PHEI personnel in Bangkok; (2) investigate best practices for digital skill development; and (3) develop and validate a guideline for enhancing personnel digital skills to support university reform.A three-phase mixed-methods design was employed. Phase 1 assessed the current and desired states and priority needs using a questionnaire administered to PHEI personnel in Bangkok. Phase 2 explored best practices through structured interviews with administrators and personnel from successful institutions. Phase 3 involved the formulation and validation of the digital skill development guideline through focus group discussions and expert evaluation.The findings revealed that personnel digital skills were at a moderate level, while the overall need for development was high. Priority areas included the use of learning management systems (LMS), application of information technology for research, and the development of online instructional innovations. The proposed guideline consists of four components: (1) principles, (2) objectives, (3) development process, and (4) success conditions. Expert evaluation indicated that the guideline demonstrated a high level of appropriateness, accuracy, and feasibility.The study concludes that systematic development of digital skills among PHEI personnel is essential for driving university reform, strengthening educational management quality, enhancing institutional competitiveness, and improving responsiveness to rapid digital transformation.

Keywords: Guideline; Digital skills development; Private higher education institutions; Personnel development; university reform

Citation

* Ntapat Worapongpat. (2026). A Guideline for Developing Digital Skills of Personnel in Private Higher Education Institutions toward University Reform in Bangkok Metropolis. Asian Journal of Humanities and Social Innovation,
3(1), 48-63.;
DOI: https://doi.org/10.
Website: https://so14.tci-thaijo.org/index.php/AJHSI

Introduction

In the contemporary digital era, rapid advancements in information technology and innovation have profoundly transformed educational systems, particularly higher education institutions, which are increasingly required to respond to lifelong learning demands, global competition, and innovation-driven development. (Worapongpat, Boonmee, 2025). Digital transformation has become a central mechanism for university reform, affecting teaching and learning, research, academic services, and institutional governance. However, the effectiveness of such transformation largely depends on the digital skills of university personnel.

In Thailand, challenges remain in translating national digital transformation policies into institutional practice. (Worapongpat, 2025c). A report by the Office of the Higher Education Commission (OHEC) indicated that private higher education institutions (PHEIs) in Bangkok utilize digital systems for teaching, learning, and administration at a rate of only 58%, which remains below the targets outlined in the Thai Higher Education Reform Plan. (Worapongpat, 2025d). Similarly, the World Economic Forum has emphasized that competencies related to big data, artificial intelligence (AI), and e-learning are essential digital skills for higher education personnel to enhance institutional competitiveness in the digital economy (Dongling & Worapongpat, 2023). Empirical studies further suggest that the development of university personnel's digital skills is positively associated with instructional quality, research productivity, and administrative efficiency (Worapongpat, 2025a). Despite this evidence, Thailand lacks clearly articulated and validated guidelines for systematic digital skill development tailored to private higher education institutions.

Bangkok Metropolis hosts the largest concentration of PHEIs in Thailand and serves as a key center for producing graduates to support the national knowledge-based economy (Good, 1973). Nevertheless, a survey conducted by the Association of Private Higher Education Institutions of Thailand revealed that a substantial proportion of personnel remain inadequately prepared to use digital technologies in teaching, learning, research, and academic services (Worapongpat, 2024b). Deficiencies are particularly evident in the use of learning management systems (LMS), big data analytics, and the development of blended and online instructional innovations (Haruthaithanasan et al., 2024). In addition, the researcher's professional experience working with faculty members and administrators in PHEIs identified a persistent institutional challenge: the absence of a clear, systematic, and sustainable guideline for developing personnel digital skills, which has become a significant barrier to effective university reform (Jing et al., 2024).

In response to these challenges, this study was conducted with three primary objectives: (1) to examine the current state, desired state, and development needs of digital skills among personnel in private higher education institutions in Bangkok; (2) to investigate best practices in digital skill development; and (3) to develop and validate a guideline for digital skill development to support university reform. (Worapongpat, Kangpheng, 2025). A mixed-methods research design was employed to achieve these objectives (Jinlei et al., 2024). Phase 1 involved a questionnaire survey to assess the current and desired states and priority needs. Phase 2 utilized structured interviews with administrators and faculty from successful institutions to identify best practices. Phase 3 employed focus group discussions and expert validation to refine and confirm the proposed guideline (Worapongpat, 2024a).

This article presents a digital skill development guideline for personnel in private higher education institutions in Bangkok, structured around four key components: (1) principles, (2) objectives, (3) development process, and (4) success conditions. The findings are expected to provide practical guidance for PHEI administrators in formulating personnel development policies and digital transformation strategies, while also contributing to the broader academic discourse on higher education administration and university reform in the context of digital transformation.

Objectives

1.Examine the current state, desired state, and development needs of digital skills among personnel in private higher education institutions (PHEIs) in Bangkok Metropolis.

2.Identify and analyze best practices in digital skill development for personnel in PHEIs.

3.Develop and validate a guideline for enhancing the digital skills of personnel in private higher education institutions in Bangkok Metropolis to support university reform.

Literature review

A rigorous literature review serves to synthesize existing theoretical and empirical studies in order to identify unresolved issues and establish a clear research gap. Prior research emphasizes that effective literature reviews must go beyond descriptive summaries by systematically analyzing relationships, assumptions, and limitations across studies (Tamanna & Sinha, 2024; Ye et al., 2024). Accordingly, this review examines global and regional trends in digital transformation in higher education, national policy and institutional contexts in Thailand, and existing digital competency frameworks, culminating in the identification of a critical gap addressed by the present study.

Global and Regional Trends in Digital Transformation in Higher Education

Globally, digital transformation (DX) has become a central strategy for reforming higher education institutions in response to technological advancement, labor market demands, and increased competition. (Makjod, et. al., 2025). Reports from UNESCO and the World Economic Forum consistently emphasize that digital skills particularly in e-learning systems, big data analytics, and artificial intelligence (AI) are no longer supplementary competencies but core capabilities required of higher education personnel (Tianshu & Worapongpat, 2023). Empirical studies across regions indicate that institutions with digitally competent personnel demonstrate higher levels of instructional quality, organizational efficiency, and innovation capacity.

However, international literature also reveals variation in the scope and implementation of digital transformation across institutional types and regional contexts. (Worapongpat, 2025e). While many studies focus on public universities or technologically advanced systems in Western countries, fewer address private higher education institutions operating under competitive and resource-constrained environments. (Worapongpat, et. al., 2025). This global evidence establishes the universal importance of digital skills while simultaneously highlighting the need for context-sensitive approaches (Xunan & Worapongpat, 2023).

The global literature underscores the necessity of digital skill development but does not sufficiently address how these competencies should be operationalized within private higher education institutions in emerging economies, particularly in urban competitive contexts such as Bangkok.

National Context: Digital Skills and Private Higher Education in Thailand

At the national level, Thailand's Digital Economy and Society Development Plan positions digital competence as a foundational driver of economic growth and educational reform. (Worapongpat, 2026). Reports from the Office of the Higher Education Commission (OHEC) and the Association of Private Higher Education Institutions of Thailand indicate persistent challenges in digital adoption among PHEIs, including limited utilization of learning management systems (LMS), insufficient application of digital tools for research, and weak integration of digital technologies into academic services (Yun & Worapongpat, 2023; Worapongpat & Arunyakanon, 2025).

Empirical studies further suggest that personnel in Thai PHEIs face structural constraints such as inconsistent institutional policies, limited professional development opportunities, and a lack of systematic guidance for digital skill enhancement. (Worapongpat, et. al., 2026). These challenges are particularly pronounced in Bangkok Metropolis, where private universities operate in a highly competitive environment and are under increasing pressure to demonstrate innovation and educational quality (Worapongpat et al., 2024).

Although national policies clearly articulate the importance of digital transformation, existing research reveals a disconnect between policy objectives and institutional-level implementation, particularly regarding personnel development in Thai private higher education institutions.

Digital Competency Frameworks and Their Limitations

International frameworks such as UNESCO's Digital Competency Framework and the European Commission's Dig Comp provide comprehensive models for conceptualizing digital skills across domains including information literacy, communication, content creation, and problem-solving. (Worapongpat, 2025f). These frameworks offer valuable reference points for benchmarking and policy alignment. Nevertheless, prior studies indicate that such models are often generalized and may not fully account for the operational realities, governance structures, and reform priorities of private higher education institutions in Thailand (Worapongpat & Chayboonkrong, 2024).

Moreover, best-practice studies derived from Western or public university contexts tend to emphasize institutional capacity and infrastructure that may not be readily transferable to Thai PHEIs. (Worapongpat, et. al., 2025). As a result, there remains limited empirical guidance on how global frameworks can be adapted into actionable and validated development guidelines tailored to the Thai private higher education context (Worapongpat et al., 2024).

The literature lacks a validated, context-specific guideline that integrates international digital competency frameworks with national policy priorities and the actual needs of personnel in private higher education institutions in Bangkok.

The synthesis of global trends, national policy analysis, and digital competency frameworks reveals a critical gap in the literature. (Worapongpat, 2025g). While the importance of digital skills for higher education reform is well established, there is

insufficient empirical research translating these concepts into practical, validated guidelines for personnel development in Thai private higher education institutions. (Worapongpat, 2025h). Existing studies tend to focus either on broad international models or on national policy discourse, without offering an integrated, institutionally grounded solution.

Grounded in human resource development theory and aligned with Thailand's Digital Economy and Society Development Plan, this study addresses this gap by developing and validating a context-specific guideline for digital skill development among PHEI personnel in Bangkok Metropolis (Worapongpat & Junsuk, 2024). By linking needs assessment, best practices, and expert validation, the study contributes both applied and scholarly value to the field of higher education administration and digital transformation.

Methodology

This study employed a mixed methods research design consisting of three sequential phases. The integration of quantitative and qualitative methods was intended to ensure that the proposed digital skill development guideline is accurate, appropriate, and responsive to the actual needs of personnel in private higher education institutions (PHEIs) in Bangkok Metropolis.

Phase 1: Investigation of the Current State, Desired State, and Needs Assessment Population and Sample

The population comprised personnel working in private higher education institutions in Bangkok Metropolis during the academic year 2024. The sample included university administrators, full-time faculty members, and support staff. The sample size was determined using Krejcie and Morgan's table, resulting in a total of 200 respondents, consisting of 30 administrators, 120 faculty members, and 50 support staff.

Research Instrument

A questionnaire using a five-point Likert-type rating scale was developed to assess personnel digital skills across four domains:

1. digital skills for teaching and learning,
2. digital skills for research and innovation,
3. digital skills for administration and data management, and
4. digital skills for academic services and networking.

Instrument Development and Quality Verification

The questionnaire was developed based on established digital competency frameworks, including the European Commission's Dig Comp 2.2 Framework and the UNESCO Digital Literacy Framework. Content validity was examined by five subject-matter experts. Following revisions, the instrument was pilot-tested with 30 PHEI personnel who were not included in the main study. Internal consistency reliability was assessed using Cronbach's Alpha (α) coefficient.

Data Collection and Analysis

Data were collected using a hybrid approach, combining online surveys administered via Google Forms and paper-based questionnaires distributed at selected institutions. Data analysis involved descriptive statistics, including arithmetic mean ($\bar{x}$) and standard deviation (S.D.). The Modified Priority Needs Index (PNI Modified) was

employed to identify development priorities by comparing the current and desired states of digital skills.

Phase 2: Study of Best Practices from High-Performing Institutions

Population and Sample

Purposive sampling was used to select three PHEIs recognized for their effective digital skill development practices. A total of nine key informants were recruited, comprising one administrator, one head of an academic or IT-related unit, and one exemplary faculty member from each institution.

Research Instrument and Data Collection

A structured interview protocol was developed based on the findings from Phase 1. In-depth interviews were conducted either face-to-face or online via platforms such as Zoom or Google Meet, according to participants' availability.

Data Analysis

Interview data were transcribed and analyzed using content analysis. Key themes and patterns were identified and synthesized to generate preliminary recommendations for the digital skill development guideline.

Phase 3: Formulation and Validation of the Digital Skill Development Guideline

Step 1: Guideline Formulation through Focus Group Discussion

A focus group discussion was conducted with seven experts specializing in higher education administration, digital technology, and human resource development. Focus group discussion record sheets were used to collect feedback on the four core components of the guideline: principles, objectives, development process, and success conditions. Content analysis was applied to refine and synthesize the data into a draft guideline.

Step 2: Guideline Validation through Expert Verification

The draft guideline was validated by seven external experts, including two administrators, two heads of human resource or personnel units, and three faculty members. A checklist-type questionnaire was employed to evaluate the guideline in terms of validity, appropriateness, and feasibility. Data were analyzed using arithmetic mean ($\bar{x}$) and standard deviation (S.D.), and final acceptance of the guideline was determined based on predefined evaluation criteria.

Results

1. Current State, Desired State, and Priority Needs Index (Objective 1)

The findings related to Objective 1, which examined the current state, desired state, and priority needs for digital skill development among personnel in private higher education institutions (PHEIs) in Bangkok Metropolis, are presented in Table 1

Digital Skill Development of PHEI Personnel, Bangkok	Current State ($\bar{x}$)	S.D.	Interpretation	Desired State ($\bar{x}$)	S.D.	Interpretation	PNI Value	Priority Rank
Digital Teaching & Learning	2.95	0.25	Moderate	4.55	0.38	High	0.46	4
Digital Research & Innovation	2.56	0.31	Low	4.65	0.29	Very High	0.57	2
Digital Administration & Governance	2.45	0.44	Low	4.62	0.23	Very High	0.59	1
Digital Academic Services & Networking	2.76	0.22	Moderate	4.79	0.15	Very High	0.54	3
Needs Assessment	3.32	0.36	Moderate	4.28	0.53	High	0.44	5
Overall	2.81	0.32	Moderate	4.58	0.32	High	0.52	-

Overall, the current state of digital skill development was rated at a moderate level ($\bar{x}$ = 2.81, S.D. = 0.32), indicating that basic digital practices have been implemented but remain insufficient to support comprehensive university reform. Among the current-state dimensions, needs assessment received the highest mean score ($\bar{x}$ = 3.32, S.D. = 0.36), suggesting that institutions possess a moderate level of awareness regarding digital skill gaps, although such awareness has not yet been fully translated into systematic development actions.

In contrast, the desired state of digital skill development was rated at a high level overall ($\bar{x}$ = 4.58, S.D. = 0.32), reflecting strong institutional expectations and readiness for enhanced digital competencies. The highest desired-state score was observed in Digital Academic Services and Networking ($\bar{x}$ = 4.79, S.D. = 0.15), highlighting the increasing importance of digital platforms for academic services, collaboration, and stakeholder engagement in a highly competitive higher education environment.

The Modified Priority Needs Index (PNI) analysis revealed an overall PNI value of 0.52**,** indicating an urgent need for digital skill development across all domains. The highest priority need (Rank 1) was identified in Digital Administration and Governance (PNI = 0.59), reflecting a substantial gap between current practices and desired capabilities, particularly in areas related to digital monitoring, evaluation, and data-driven decision-making. The second highest priority (Rank 2) was Digital Research and Innovation (PNI = 0.57), underscoring the necessity for strategic planning and capacity development to strengthen digital research competencies and innovation capacity. These findings clearly justify the need for a structured and systematic guideline for digital skill development among PHEI personnel.

2. Best Practices in Digital Skill Development (Objective 2)

The analysis of qualitative data collected from institutions recognized for their best practices in digital skill development revealed five key themes.

Guideline Component	Accuracy ($\bar{x}$ / S.D.)	Interpretation	Appropriateness ($\bar{x}$ / S.D.)	Interpretation	Feasibility ($\bar{x}$ / S.D.)	Interpretation	Criteria
Training & Capacity Building	4.82 / 0.51	Very High	4.82 / 0.51	Very High	4.82 / 0.51	Very High	Met
Digital System Utilization	4.97 / 0.49	Very High	4.82 / 0.51	Very High	4.82 / 0.51	Very High	Met
Knowledge Exchange & Development	(Data not shown, subsumed)	-	(Data not shown, subsumed)	-	(Data not shown, subsumed)	-	-
Continuous M&E	4.97 / 0.49	Very High	4.82 / 0.51	Very High	4.82 / 0.51	Very High	Met
Expected Outcomes (Overall)	4.97 / 0.49	Very High	4.97 / 0.49	Very High	4.82 / 0.51	Very High	Met
Personnel Digital Skills	4.97 / 0.49	Very High	4.97 / 0.49	Very High	4.68 / 0.64	Very High	Met
University Quality Enhancement	4.97 / 0.49	Very High	4.97 / 0.49	Very High	4.97 / 0.49	Very High	Met
National Strategy Alignment	4.82 / 0.51	Very High	4.82 / 0.51	Very High	4.97 / 0.49	Very High	Met
Supplementary Factors (Digital Policy)	4.97 / 0.49	Very High	4.97 / 0.49	Very High	4.97 / 0.49	Very High	Met
Resource Support	4.82 / 0.51	Very High	4.97 / 0.49	Very High	4.82 / 0.51	Very High	Met
Infrastructure Development	4.82 / 0.51	Very High	4.97 / 0.49	Very High	4.97 / 0.49	Very High	Met
Overall Average	4.90 / 0.50	Very High	4.91 / 0.48	Very High	4.87 / 0.50	Very High	Met

First, needs and potential assessment should be conducted systematically at least once a year using multiple tools, such as online questionnaires, in-depth interviews, and self-assessment instruments. This approach enables institutions to obtain an accurate and dynamic understanding of personnel digital competencies and development needs.

Second, strategic digital skill planning emerged as a critical success factor. Effective institutions implemented comprehensive development programs that included hands-on workshops, knowledge-sharing activities, the establishment of digital transformation oversight committees, and innovation-oriented initiatives such as hackathons. The creation of a centralized Digital Media Hub was also identified as an important mechanism to support personnel in teaching, research, and academic service innovation.

Third, monitoring and evaluation (M&E) systems were found to be essential for ensuring the effectiveness of digital skill development initiatives. Successful institutions employed clearly defined roles and responsibilities, combined internal and external evaluation mechanisms, and adopted standardized digital competency criteria, such as the DigComp framework, to align personnel development with institutional reform objectives.

Fourth, review and revision processes based on evaluation data enabled institutions to identify strengths and weaknesses and to allocate resources more effectively. Flexibility and adaptability were emphasized, particularly in response to rapid technological change.

Finally, reporting and dissemination of digital skill development outcomes were identified as important drivers of sustainability. Regular reporting through online platforms, institutional reports, innovation showcases, and digital competitions contributed to knowledge sharing, personnel motivation, and the development of a collaborative digital culture.

3. Formulation and Validation of the Digital Skill Development Guideline (Objective 3)

Proposed Digital Skill Development Guideline

Based on the findings from Phases 1 and 2, a Digital Skill Development Guideline for PHEI Personnel in Bangkok Metropolis was formulated, comprising four core components.

1. Principles

The guideline is grounded in the principles of lifelong learning, learning by doing (action learning), and adaptability to change, supported by a conducive digital environment and collaboration with academic and industry networks.

2. Objectives

The guideline aims to serve as a strategic roadmap for developing personnel digital skills in alignment with international standards, strengthening capacities in teaching, research, and academic services, and driving university reform toward a digital university model.

3. Development Process

The development process is structured according to the PDCA (Plan–Do–Check–Act) quality cycle and consists of five steps:

(1) needs and potential survey,

(2) strategic planning,

(3) monitoring and evaluation,
(4) review and revision, and
(5) reporting and public communication.
4. Success Conditions
Success conditions are identified at three levels:
-University level: clear policies and adequate budget support for digital transformation;
-Administrator level: strategic leadership and effective governance;
-Personnel level: motivation, digital competence, and critical digital literacy awareness.

Discussion

1. Current State, Desired State, and Digital Skill Gaps (Objective 1). The results revealed that the overall current state of digital skills among PHEI personnel remains at a moderate level ($\bar{x} = 2.81$), particularly in relation to the effective utilization of institutional digital systems such as learning management systems (LMS), enterprise resource planning (ERP), and basic office automation tools. While these competencies indicate partial digital readiness, the findings also point to substantial deficiencies in advanced digital capabilities, including digital learning innovation design, data literacy, and awareness of cyber ethics and digital governance. The Priority Needs Index (PNI) analysis further underscores the severity of these gaps. The highest priority needs were identified in Digital Administration and Governance (PNI = 0.59) and Digital Research and Innovation (PNI = 0.57), highlighting an urgent need for capacity development in strategic digital planning, data-driven decision-making, research analytics, and innovation-oriented academic services. These gaps reflect broader structural challenges faced by PHEIs in Bangkok, where institutions operate under intense market competition, rapid technological change, and limited availability of personnel with advanced digital expertise (Ali, 2023; Ziyia, Wongkumchai, Soprakana, & Worapongpat, 2024).Importantly, the pronounced disparity between the moderate current state and the high desired state of digital skills indicates that digital competency development in PHEIs is not merely an operational enhancement but a strategic imperative. In this context, digital skills function as a critical determinant of institutional resilience, competitiveness, and long-term sustainability in the digital economy. These findings reinforce the argument that fragmented or ad hoc training initiatives are insufficient, and that systemic, institution-wide interventions are required.

2. Best Practices and Critical Success Factors (Objective 2). The analysis of best-practice institutions revealed three recurring factors that underpin effective digital skill development: (1) the presence of clear and organization-wide digital transformation policies,(2) the implementation of mentoring systems, particularly pairing digitally proficient junior staff with experienced senior personnel, and (3) continuous and targeted budget allocation for personalized digital upskilling. The convergence of these factors suggests that successful institutions conceptualize digital skills as a core organizational capability rather than as auxiliary or technical competencies. This strategic orientation aligns with the findings of Baashar et al. (2022) and Zhou, Worapongpat, and Liuyue (2024), who emphasize that sustainable digital transformation in higher education requires an integrated capability framework spanning policy, leadership, infrastructure, and human resources. Furthermore, the

emphasis on mentoring and policy-driven change supports Breckler's (1986) notion of adaptive leadership, which argues that meaningful organizational transformation necessitates cultural and behavioral change in addition to technological adoption. In this regard, digital skill development emerges as both a technical and socio-organizational process, requiring sustained leadership commitment, institutional learning cultures, and cross-generational knowledge exchange.

3. Validation of the Digital Skill Development Guideline (Objective 3). The proposed Digital Skill Development Guideline, consisting of four key components principles and vision, strategic objectives, a systemic development process, and critical success factors was rigorously validated by domain experts. The overall evaluation results, with an average mean score of 4.90 (S.D. = 0.50) across accuracy, appropriateness, and feasibility, indicate a high level of expert consensus regarding the quality and applicability of the guideline. These findings are consistent with the work of Cantú-Ortiz et al. (2020), who emphasize that effective digital development frameworks must integrate technological leadership with robust internal support systems. Additionally, the guideline's structure, grounded in the Plan–Do–Check–Act (PDCA) cycle, reflects contemporary approaches to sustainable and agile organizational development in higher education (Worapongpat, 2025b). The very high feasibility ratings suggest that the guideline is not only conceptually sound but also practically implementable within the operational constraints of PHEIs in Bangkok Metropolis, thereby offering a viable mechanism for supporting university reform.

Knowledge Contribution

This study contributes new knowledge to the field of higher education management and digital transformation by integrating empirical evidence from Private Higher Education Institutions (PHEIs) in Bangkok Metropolis with international digital competency frameworks and best-practice strategies.

The principal original contribution of this research is the validated "Guideline for Digital Skill Development in Private Higher Education Institutions", which systematically links:

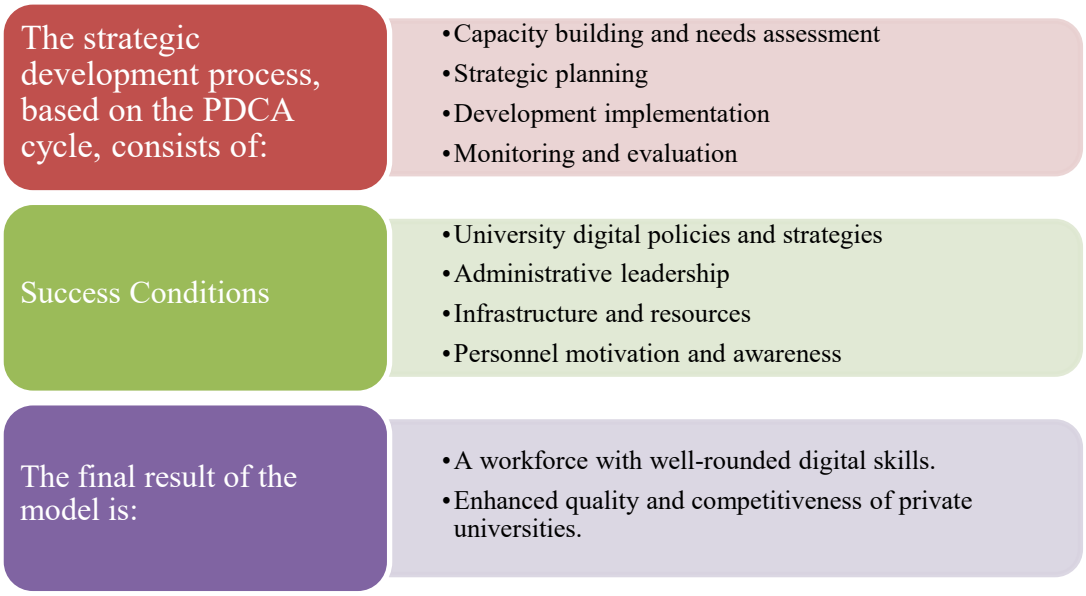

Figure 1 A Digital Skill Development Model for University Reform in PHEIs

The diagram illustrates a systemic model for developing digital skills among personnel in private higher education institutions. The model begins with an empirical assessment of the current state, desired state, and priority needs (PNI), identifying critical digital skill gaps particularly in digital administration, governance, and research innovation.

These findings inform a PDCA-based development process, consisting of needs assessment, strategic planning (including mentoring systems and dedicated funding), implementation, monitoring and evaluation, and continuous improvement. The process is reinforced by enabling conditions at the policy, leadership, infrastructure, and personnel levels.

The model demonstrates how targeted digital skill development leads to enhanced personnel capacity, improved institutional quality and competitiveness, and ultimately, successful university reform aligned with national and global digital transformation agendas.

Conclusion

This study confirms that digital skill development among personnel in private higher education institutions in Bangkok Metropolis remains at a moderate level and is characterized by significant gaps between existing competencies and institutional expectations. The high priority needs identified particularly in digital administration, governance, research, and innovation demonstrate that current development approaches are insufficient to support the demands of digital university reform.

By synthesizing empirical needs assessment data with best-practice analysis, the study formulated a comprehensive and systematically validated digital skill development guideline. The very high levels of expert agreement regarding its accuracy, appropriateness, and feasibility indicate that the guideline provides a credible

and practical framework for strengthening personnel digital competencies. Ultimately, the findings suggest that strategic, system-driven digital skill development is essential for enhancing institutional competitiveness, resilience, and sustainability in the evolving digital higher education landscape.

Recommendations

Based on the findings of this study, the following recommendations are proposed:

Policy-Level Recommendations

PHEIs should institutionalize digital skill development as a core strategic priority by integrating it into university policies, quality assurance systems, and long-term development plans. Clear governance structures and sustained budgetary support are essential for ensuring continuity and impact.

Administrative and Managerial Recommendations

University administrators should adopt the proposed guideline as a structured roadmap for personnel development, emphasizing data-driven planning, systematic monitoring and evaluation, and adaptive leadership. The establishment of mentoring systems and cross-functional digital task forces is strongly recommended.

Operational-Level Recommendations

Digital skill development initiatives should prioritize advanced competencies, including data literacy, digital research tools, learning innovation design, and ethical digital governance. Development activities should move beyond short-term training toward experiential and collaborative learning models.

Recommendations for Future Research

Future studies should examine the longitudinal impacts of guideline implementation on institutional performance and personnel outcomes. Comparative studies across different regions or types of higher education institutions would further enhance the generalizability of the findings.

References

Ali, A. (2023). *Assessing artificial intelligence readiness of faculty in higher education: A comparative case study of Egypt* (Master's thesis). The American University in Cairo, Egypt.

Baashar, Y., Hamed, Y., Alkawsi, G., Capretz, L. F., Alhussian, H., Alwadain, A., & Al-amri, R. (2022). Evaluation of postgraduate academic performance using artificial intelligence models. *Alexandria Engineering Journal*, *61*(12), 9867–9878.

Breckler, S. W. (1986). *Attitude structure and function*. Lawrence Erlbaum Associates.

Cantú-Ortiz, F. J., Galeano Sánchez, N., Garrido, L., Terashima-Marin, H., & Brena, R. F. (2020). An artificial intelligence educational strategy for the digital transformation. *International Journal on Interactive Design and Manufacturing*, *14*, 1195–1209. https://doi.org/10.1007/s12008-020-00661-0

Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). John Wiley & Sons.

Dongling, Z., & Worapongpat, N. (2023). Academic leadership of administrators influencing learning organizations: A case study of a university in Hong Kong. *International Journal of Multidisciplinary in Educational & Cultures Studies*, *1*(2), 12–20.

Good, C. V. (1973). *Dictionary of education*. McGraw-Hill.

Haruthaithanasan, T., Thupaang, A., Nimsuwan, N., & Tarawat, N. (2024). Technology leadership of school administrators affecting internal quality assurance in the digital era. *Journal of Intellect Education*, *3*(4), 13–32.

Jinlei, W., Worapongpat, N., & Wongkumchai, T. (2024). Guidelines for appropriate tax strategy in China's agricultural industry. *International Journal of Multidisciplinary in Educational & Cultures Studies*, *2*(1), 29–49.

Tamanna, M., & Sinha, B. (2024). Artificial intelligence in higher education: Opportunities and challenges. *Quality Assurance in Education*. Advance online publication.

Tianshu, M., & Worapongpat, N. (2023). Hybrid teaching management systems in art education. *UBRU International Journal*, *3*(1), 25–37.

Worapongpat, N. (2024a). Innovative leadership and learning organizations in private universities. *UBRU International Journal*, *4*(2), 29–44.

Worapongpat, N. (2024b). Factors influencing purchasing decisions for community souvenirs. *Journal of Education and Learning Reviews*, *1*(1), 1–16.

Worapongpat, N. (2025a). Mindfulness in the use of artificial intelligence for learning. *Asian Education and Learning Review*, *3*(2), 1–11. https://doi.org/10.14456/aelr.2025.6

Worapongpat, N. (2025b). Integrating interdisciplinary workshop design to advance leadership skills. *Liberal Arts and Social Studies International Journal*, *1*(2), 55–71.

Worapongpat, N. (2025c). Academic administration of educational institution administrators in Mueang Ranong District under the jurisdiction of the Secondary Educational Service Area Office Phang Nga, Phuket, Ranong. *KKU International Journal of Humanities and Social Sciences*, *15*(1), 24–45. https://so04.tci-thaijo.org/index.php/KKUIJ/article/view/270388

Worapongpat, N. (2025d). Patterns of participation in the development of life skills, environment, society, and good governance among educational personnel in public universities through a meditation program in Buddhist sacred lands. *Journal of MCU Languages and Cultures*, *5*(1), 1–22. https://so08.tci-thaijo.org/index.php/JMLC/article/view/4734

Worapongpat, N. (2025e). Reducing the digital divide and promoting access to public services for the elderly in local administrative organizations of Mueang District, Maha Sarakham Province. *Journal of Public and Private Issues*, *2*(4), 232–241. https://so17.tci-thaijo.org/index.php/jppi/article/view/1206

Worapongpat, N. (2025f). Development of life skills and cognitive competencies among private university educators through Buddhist practice in Thailand, India, and Nepal. *Buddhism in Mekong Region Journal*, *8*(2), 1–23. https://so06.tci-thaijo.org/index.php/bmrj/article/view/284932

Worapongpat, N. (2025g). The influence of transformational leadership and organizational justice on faculty work engagement in universities in Liaoning Province, China. *Asian Social and Educational Innovation Journal*, *1*(2), 1–11. https://so18.tci-thaijo.org/index.php/CIM_Journal2/article/view/1362

Worapongpat, N. (2025h). Guidelines for public service development through one-stop services toward digital local government. *Nakhon Ratchasima Journal of Humanities and Social Sciences*, *1*(6), 77–103. https://so11.tci-thaijo.org/index.php/NJHSS/article/view/2857

Worapongpat, N. (2026). Development of brain-based learning innovations to enhance Thai reading and writing skills in non-formal education: A case study of the special non-formal education center in Chonburi Province. *Journal of Education and Learning Reviews*, *3*(1), e2541. https://doi.org/10.60027/jelr.2026.e2541

Worapongpat, N., & Kangpheng, S. (2025). Transformational leadership skills for executives in the digital age: China Polytechnic College. *Journal of Education and Learning Reviews*, *2*(5), 27–44. https://doi.org/10.60027/jelr.2025.931

Makjod, S., Worapongpat, N., Kangpheng, S., & Bhasabutr, P. (2025). Academic administration of opportunity expansion schools under the Prachinburi Primary Educational Service Area Office 1. *Journal of Education and Learning Reviews*, *2*(5), 85–94. https://so19.tci-thaijo.org/index.php/JELS/article/view/963

Worapongpat, N., Kangpheng, S., Bhasabutr, P., & Techanok, A. (2025). Creative leadership of administrators and effectiveness of private higher education colleges in Bangkok. *Asian Journal of Humanities and Social Innovation*, *2*(4), 1–20. https://so14.tci-thaijo.org/index.php/AJHSI/article/view/2121

Worapongpat, N., Kangpheng, S., & Bhasabutr, P. (2025). Educational innovation through infographic media development. *Journal of Public and Private Issues*, *2*(5), 256–263. https://so17.tci-thaijo.org/index.php/jppi/article/view/1264

Worapongpat, N., & Boonmee, K. (2025). The impact of women's leadership on teachers' feelings of trust in administration in higher education institutions: Universities in Liaoning Province. *KKU International Journal of Humanities and Social Sciences*, *15*(1), 162–197. https://so04.tci-thaijo.org/index.php/KKUIJ/article/view/274357

Worapongpat, N., & Arunyakanon, P. (2025). Transformational leadership and change management competency. *Journal of Education and Learning Reviews*, *2*(2), 47–58. https://doi.org/10.60027/jelr.2025.913

Worapongpat, N., Cai, Q., & Wongsawad, T. (2024). Creating and validating a digital leadership model. *Journal of Education and Learning Reviews*, *1*(3), 1–10.

Worapongpat, N., & Chayboonkrong, P. (2024). Learning innovations in science and technology. *Journal of Public and Private Issues*, *1*(1), 21–32.

Worapongpat, N., Dookarn, S., Boonmee, K., Thavisin, N., & Chanphong, S. (2025). Mindfulness in the use of AI and its impact on learning. *Journal of Intellect Education*, *4*(1), 97–109.

Worapongpat, N., & Junsuk, P. (2024). Personnel development in local administrative organizations. *Journal of Public and Private Issues*, *1*(1), 45–54.

Worapongpat, N., Thavisin, N., & Viphooparakhot, B. (2024). Wireless communication technology in digital communities. *Journal of Public and Private Issues*, *1*(5), 230–242.

Worapongpat, N., Kangpheng, S., & Bhasabutr, P. (2026). Examining the relationship between AI competency and AI awareness among graduate-level instructors in private higher education institutions in Thailand. *Journal of Education and Learning Reviews*, *3*(1), e2551. https://doi.org/10.60027/jelr.2026.e2551

Xunan, L., & Worapongpat, N. (2023). Transformational leadership administration in China. *International Journal of Multidisciplinary in Educational & Cultures Studies*, *1*(1), 14–27.

Ye, T., Viphooparakhot, V., & Howattanakul, S. (2024). Innovative entrepreneurship education management. *Journal of Intellect Education*, *3*(6), 18–30.

Yun, H. Z., & Worapongpat, N. (2023). Impacts of new media on classroom teaching management. *Journal of Multidisciplinary in Humanities and Social Sciences*, *6*(1), 22–39.

Zhou, W., Worapongpat, N., & Liuyue, Z. (2024). Leadership under wisdom education. *International Journal of Multidisciplinary in Educational & Cultures Studies*, *2*(1), 15–28.

Ziyia, J., Wongkumchai, T., Soprakana, C., & Worapongpat, N. (2024). Assessing the role of AI-powered chatbots in pharmaceutical e-commerce. *RMUTT Global Business Accounting and Finance Review*, *8*(1), 31–48.